

Amendments to the Claims:

1. (Currently amended) A nucleic acid reference library derived from pooled DNA from at least five individuals in a population ~~two sources~~, said library comprising a heterogeneous mixture of nucleic acid fragments from digestion of said pooled DNA, wherein the sequence of each said fragment is either

(a) is a portion of a polymorphic subregion of a polymorphic consensus sequence derived from said pooled DNA, or

(b) a non-polymorphic subregion of said polymorphic consensus sequence;
and said library is enriched for fragments of type (a) relative to type (b);

~~each of said polymorphic subregions is bounded by first restriction sites and comprises an internal polymorphic restriction site which is different from said first site;~~

wherein said polymorphic consensus sequence is the theoretical sequence obtained by
(i) aligning the sequences of said pooled DNA to provide maximum homology, and (ii)
projecting each of said restriction sites onto said sequence; and said subregions of said
polymorphic consensus sequence are defined by:

designating as "polymorphic", subregions which are bound on each end by a first
restriction site s, present in each of said pooled DNA sequences, and which contain an
internal second restriction site t, different from said first restriction site, in some but not all
of said pooled DNA sequences, and

designating as "non-polymorphic", subregions which are bound on each end by said
first restriction site s, and which contain said internal second restriction site t in either none
or all of said pooled DNA sequences.

~~and said library is enriched for fragments of type (a) relative to type (b).~~

2. (Previously presented) A nucleic acid reference library according to claim 1, wherein at least a subpopulation of said nucleic acid fragments further comprise oligonucleotide tags, and different nucleic acid fragments are linked to different oligonucleotide tags.

3. (Previously presented) The nucleic acid reference library according to claim 2, wherein said fragments are contained within a replicable vector.

4. (Previously presented) The nucleic acid reference library according to claim 2, wherein said oligonucleotide tags comprise oligonucleotides of the form:

$$S_1 S_2 S_3 \dots S_n$$

wherein each of S_1 through S_n are subunits consisting of an oligonucleotide having a length from 3 to 9 nucleotides and are selected from a minimally cross-hybridizing set, n is in the range of from 4 to 10, and said tag has a length in the range of from 12 to 60 nucleotides or base pairs.

5-20. (Cancelled)